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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/545,529	04/07/2000	J. Carl Cooper	JCC-400A	9794

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EXAMINER	
LEE, MICHAEL	
ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/545,529	COOPER, J. CARL	
	Examiner	Art Unit	
	M. Lee	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 March 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3-4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claims 2, 8 are objected to because of the following informalities: steps c and d should be changed from passive voice to active voice. Appropriate correction is required.

2. Claim 33 is objected because it is a duplicate of claim 31. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 23 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The amplitude modulation is considered new matter because it was not disclosed in the original disclosure.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Shuhart, Jr. et al. (5,065,251).

Regarding claim 1, Shuhart discloses a method and apparatus for graphically marking an audiovisual recording to indicate occurrence of an official's whistle signal showing an audio interface means 50 and filter/discriminator 60 for detecting an occurrence of a whistle blowing event and for marking the video signal with a marker (col. 5, lines 25-68), which clearly meets the marking step as claimed.

7. Claims 1-4, 16-21, 26, 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Cooper (4,703,355).

Regarding claim 1, Cooper shows a step of marking said first signal with a marker in response to the occurrence of a particular event in said second signal as claimed (col. 6, lines 46-55).

Regarding claim 2, Cooper shows a step of identifying the occurrence of a particular event in said audio type signal as claimed (col. 8, lines 47-52), a step of marking said video type signal as claimed (col. 6, lines 46-55), a step of identifying the occurrence of the same said particular event in the processed version as claimed (col. 6, lines 64-68), a step of identifying said marking of said video type signal in the processed version as claimed (col. 6, lines 59-64), and a comparing step for comparing the time at which said particular event is again identified to the time of said marking of

said processed version of said video type signal being detected to determine the relative timing there between as claimed (col. 6, lines 10-23).

Regarding claim 3, Cooper shows a marker generator responsive to said second signal to generate a marker upon the occurrence of particular characteristics of said second signal as claimed (col. 8, lines 47-52), a marker associator responsive to said marker and said first signal for marking said first signal with said marker as claimed (col. 6, lines 46-55), a marker separator responsive to said first signal after said subsequent processing to detect presence of said marker therein and in response thereto generate a first delay marker (col. 6, lines 59-64), a marker generator responsive to second signal after said subsequent processing to generate a second delayed marker as claimed (col. 6, lines 64-68), and a relative timing comparison responsive to said first delayed marker and said second delayed marker to determine the relative timing there between (col. 6, lines 10-23).

Regarding claim 4, Cooper shows a sync stripper and clock generator which inherently strips any sync component from the video signal. It clearly meets said video signal is to be processed in a fashion which removes the horizontal and vertical blanking portion thereof as claimed.

Regarding claim 16, Cooper shows a step for developing a marker in response to said ancillary signal (col. 8, lines 47-45), a step of associating said marker with said video like signal (col. 6, lines 46-55), a step of recovering said marker from said delayed video like signal (col. 6, line 59-64), a step of developing a second marker corresponding to said marker from said delayed ancillary signal (col. 6, lines 64-68), and

a step of determining said synchronization in response to comparison of the timing of said marker relative to the timing of said second marker (col. 6, lines 10-23).

Regarding claim 17, in addition of above, Cooper further shows a delaying step for delaying the least delayed signals (col. 6, lines 16-25).

Regarding claim 18, in addition of above, Cooper further shows a step of indicating said relative delay in response to comparison of the timing of said marker relative to the timing of the second marker (col. 6, lines 27-32).

Regarding claim 19, the marker is responsive to a parameter of the ancillary signal (col. 11, lines 54-56).

Regarding claim 20, the marker is responsive to a characteristic of the ancillary signal (col. 11, lines 51-53).

Regarding claim 21, the marker is responsive to said video like signal because the marker is developed in response to both the audio signal and the video signal as illustrated in Figure 7. Notice that the enable gate 92 develops the marker based on the audio signal 101 and video sync signal 93.

Regarding claim 26, Cooper shows a video signal and an audio signal which meet the video and audio signals as claimed.

Regarding claim 28, Cooper shows a step of developing a digital marker signal in response to said audio (col. 8, lines 47-52), a step of carrying said marker with said video in said transmitting or storing (note video transmission path 23), a step of recovering said marker from the resulting delayed video (col. 6, lines 59-64), a step of developing second marker corresponding to said marker (col. 6, lines 64-68), a step of

indicating said synchronization in response to comparison of the relative timing of said marker and said second marker (col. 6, lines 26-32).

Regarding claim 29, in addition of above, Cooper further shows a step of delaying (col. 6, lines 10-23).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 5-15, 24-25, 27, 32, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (4,703,355) in view of Conover et al. (6,373,960).

Regarding claim 5, Cooper does not specify that the audio and video signals are transmitted in MPEG compressed form where only the active video portion of said video signal is transmitted as claimed. Instead, the signals in Cooper are transmitted in analog form. Conover, from the similar field of endeavor, teaches the use of formatting and processing video signal in MPEG format. The advantages of such format are that it provides better picture and audio quality, requires less storage space or transmission bandwidth, and has better manipulability in comparing to conventional analog format. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to convert the analog system of Cooper into digital format so that the above digital format advantages can be realized. It should be noted that there are

no analog horizontal and vertical sync components in a MPEG signal. Signals in a MPEG are virtually consisted of active video signal only since they are made up of blocks or packets of the video data.

Regarding claims 6, 7, Cooper does not specify that the marking includes modifying the image portion of said video signal by use of a watermarking technique as claimed. In order to achieve the objectives (MPEG advantages) as discussed above while at the same time performing the timing equalization of Cooper, the marking in Cooper must be inserted into the MPEG video signal. However, since there is no vertical blanking interval in MPEG formatted video signals, the marking as taught in Cooper cannot be inserted into a MPEG formatted video signal. Conover, from the similar field of endeavor, teaches embedding watermarkings into video data. By embedding watermarkings into video signal, minimal damage to the original image signal is done and the watermark itself will survive the rigorous image processings (col. 1, lines 30-48). Therefore, in view of the advantages of MPEG video signals and to ensure the survival of the watermark during the image compressing and decompressing processings, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the water marking technique of Conover along with MPEG format into Cooper to perform the well known functions as claimed.

Regarding claim 8, Cooper discloses all the features of the instant invention as discussed above except the compressed and decompress video and audio signals as claimed. Instead, the signals in Cooper are transmitted in analog form without any signal compression or decompression as claimed. Conover, from the similar field of

endeavor, teaches the use of formatting and processing video signal in MPEG format. For instance, Conover employs a MPEG encoder 76 for compressing video signal (analog or digital) into MPEG format, and a STB 112 for receiving and decompressing MPEG video signal into baseband signal. The advantages of such format are that it provides better picture and audio quality signals, requires less storage space transmission bandwidth, and has better manipulability in comparing to conventional analog format. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to convert the analog system of Cooper into digital format so that the above digital format advantages can be realized.

Regarding claim 9, Cooper shows that a binary number of a marker is placed in the overscanned area of said image area (note Figure 8).

Regarding claim 10, as discussed above, Conover teaches embedding watermark in the image area (col. 5, lines 1-27).

Regarding claim 11, the event is the presence of audio signal in a low frequency band (see lowpass filter 65).

Regarding claim 12, Cooper shows two low pass filters 68a and 68b in Figure 6 except to specify the filtering characteristics of the low pass filters. In order to detect different audio signals, the filters can be customized to pass different low frequency signals. It is a matter of design choice and would have been obvious to one of ordinary skill in the art.

Regarding claim 13, Cooper discloses a comparator 100 connected to low pass filter 98. The comparator 100 output is high only when the input signal is positive (note col. 11, lines 54-56).

Regarding claims 14 and 15, Cooper shows that a binary pattern that derived from a low frequency audio signal is combined with a video signal through a enable gate 92 which is controlled by a vertical sync of the video signals (see Figure 7, and col. 12, lines 14-57).

Regarding claims 24, 25, Cooper does not specify that the marking includes encoding marker as a watermark in the video like signal and the watermark is recognized and the marker recovered therefrom as claimed. In order to achieve the objectives (MPEG advantages) as discussed above while at the same time performing the timing equalization of Cooper, the marking in Cooper must be inserted into the MPEG video signal. However, since there is no vertical blanking interval in MPEG formatted video signals, the marking as taught in Cooper cannot be inserted into a MPEG formatted video signal. Conover, from the similar field of endeavor, teaches embedding watermarkings into video data. By embedding watermarkings into video signal, minimal damage to the original image signal is done and the watermark itself will survive the rigorous image processings (col. 1, lines 30-48). Therefore, in view of the advantages of MPEG video signals and to ensure the survival of the watermark during the image compressing and decompressing processings, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the water

marking technique of Conover along with MPEG format into Cooper to perform the well known functions as claimed.

Regarding claim 27, Cooper does not specify that the video and audio signals are encoded in MPEG form as claimed. Instead, the signals in Cooper are transmitted in analog form. Conover, from the similar field of endeavor, teaches the use of formatting and processing video signal in MPEG format. The advantages of such format are that it provides better picture and audio quality, requires less storage space or transmission bandwidth, and has better manipulability in comparing to conventional analog format. Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to convert the analog system of Cooper into digital format so that the above digital format advantages can be realized. It should be noted that there are no analog horizontal and vertical sync components in a MPEG signal. Signals in a MPEG are virtually consisted of active video signal only since they are made up of blocks or packets of the video data.

Regarding claims 32 and 34, Cooper does not specify that the marker is combined in the active portion of said video in an unobtrusive manner or as a watermark as claimed. In order to achieve the objectives (MPEG advantages) as discussed above while at the same time performing the timing equalization of Cooper, the marking in Cooper must be inserted into the MPEG video signal. However, since there is no vertical blanking interval in MPEG formatted video signals, the marking as taught in Cooper cannot be inserted into a MPEG formatted video signal. Conover, from the similar field of endeavor, teaches embedding watermarkings into video data.

By embedding watermarkings into video signal, minimal damage to the original image signal is done and the watermark itself will survive the rigorous image processings (col. 1, lines 30-48). Therefore, in view of the advantages of MPEG video signals and to ensure the survival of the marker during the image compressing and decompressing processings, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the water marking technique of Conover along with MPEG format into Cooper to perform the well known functions as claimed.

10. Claims 22, 23, 30, 31, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper (4,703,355) in view of Janko et al. (5,818,520).

Regarding claims 22, 23, Cooper does not specify that the step of associating said marker with said video like signal includes engrafting said marker onto the luminous portion of said video like signal and it is amplitude modulated. Janko, from the similar field of endeavor, teaches superimposing markers onto the active portion of the video signal. By doing so, the markers can survive the video compression process (col. 4, lines 4-14). Janko further teaches that the markers can be used to identify and capture the processed video frames time aligned with the reference frames (col. 4, lines 10-14). Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to superimpose the markers of Cooper onto the active portion of the video signal so that the marker can survive the video compression process. It should be noted that the audio signal in Cooper is inherently amplitude modulated. For instance, human voices are amplitude modulated.

Regarding claims 30, 31 and 33, Cooper does not specify that the marker is engrafted onto the luminous or active portion of the video signal as claimed. Janko, from the similar field of endeavor, teaches superimposing markers onto the active portion of the video signal. By doing so, the markers can survive the video compression process (col. 4, lines 4-14). Janko further teaches that the markers can be used to identify and capture the processed video frames time aligned (delay compensation) with the reference frames (col. 4, lines 10-14). Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to superimpose the markers of Cooper onto the active portion of the video signal so that the marker can survive the video compression process.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yuang et al. (6,480,902) shows an audio/video marking means.

Orland et al. (4,963,967) shows a marker inserter.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Lee whose telephone number is **703-305-4743**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John Miller**, can be reached at **703-305-4795**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

M. Lee
Primary Examiner
Art Unit 2614

May 30, 2003